

MEDICO-SOCIAL AND GENDER AND AGE-RELATED FEATURES OF ACUTE SINUSITIS PHARMACOTHERAPY

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Annotation. *It was determined that acute rhinosinusitis is a sufficiently widespread disease in the otorhinolaryngology of Ukraine, especially in Kyiv, Kharkiv and Rivne regions, and with the lowest prevalence in the Zaporizhzhya and Kirovograd regions for the research period of 2012-2017. It has also been found that acute rhinosinusitis affects men as and women with an average age of 37.0 ± 5.5 and 42.0 ± 24 respectively. Modern approaches to the pharmacotherapy of acute rhinosinusitis are carried out in accordance with the protocol for the provision of medical care to patients and are comprehensive and directed at the main components of the etiopathogenesis of the disease. But it is necessary to update the approaches to treatment of acute rhinosinusitis constantly, taking into account the latest researches on pharmacotherapeutic support of patients.*

Key words: *the incidence of acute rhinosinusitis, regions of Ukraine, pharmacotherapy of acute rhinosinusitis*

The problem of acute inflammatory diseases of the upper respiratory tract, acute rhinosinusitis, in particular, is one of the pressing problems of modern otolaryngology. In recent years, there has been an increase in the frequency of nose and sinus disease, which is manifested by an increase in absolute (morbidity and prevalence). Rhinosinusitis is more often the cause of persistent headache, discharge from the nose, which significantly impairs the patient's quality of life; In addition, this pathological process can provoke a number of complications, among which the most common meningitis and brain abscess [1].

Attention is drawn to the high frequency of diagnostic errors in the examination of such patients, therefore, more than 70% of patients with complications of sinusitis do not receive adequate therapy on time, and after being admitted to hospital, indications for emergency surgical intervention are determined [2].

The main complaints of the patient are directed to nasal congestion, nasal discharge or postnasal flutter, pressure sensation, overflow and pain in the sinuses area, general weakness, reduction or loss of smell, possible toothache and sore throat, etc. An important aspect in collecting the history of the disease is the information on the presence of severe symptoms (fever $\geq 38^\circ\text{C}$ and purulent discharge from the nasal cavity for more than 3 days), information on traumas and upper respiratory tract infections, as well as data on allergies (allergic rhinitis) and bronchial asthma [3].

Epidemiological studies conducted in many European countries have shown that the incidence of allergic rhinitis has grown tenfold in the last decade [4]: the results of

these studies indicate that 10-15% of the population suffer from the AR in developed countries [5]. In this case, AR is more common in urban residents, which is associated with an increase in air pollution in metropolitan areas. It has been established that AR can provoke development of other diseases of the respiratory tract and ears: yes, in 24% of cases, AR is a risk factor for the development of acute and chronic middle ear otitis, and in 28% of cases, chronic rhinosinusitis [6]. Thus, it may be noted that one of the important factors in the development of rhinosinusitis is allergic rhinitis, which is typical for residents of large cities.

The purpose of the study was retrospective analysis of the acute rhinosinusitis incidence in different regions of Ukraine, the gender- and age-related analysis of patients with acute rhinosinusitis, and identification of modern pharmacotherapy trends.

Materials and methods of research. The research was based of data from the statistical reporting of the SI "Center of Medical Statistics of the Ministry of Health of Ukraine" about the level of primary morbidity and prevalence of acute rhinosinusitis in adults for the period 2012-2017 [7]. Regarding the assessment of the gender-age characteristics of patients with acute sinusitis, an analysis of medical cards of inpatients (form №003/o) was carried out in the number of 431 (fixed gender and age). The study used bibliosemantic and medical-statistical methods [8]. A comparative analysis of European and World standards of acute rhinosinusitis treatment was conducted.

Research results. Analysis of the medical statistics center data on the prevalence of rhinosinusitis in Ukraine for the period from 2012 to 2017 in the adult population identified several contradictory information (Fig. 1). Thus, the prevalence of the disease varied from 427.3 cases per 100,000 population in 2014 to 468.7 cases in 2016 when analyzing data for 6 years of research. Data on the prevalence of acute rhinosinusitis in Sevastopol, the Autonomous Republic of Crimea and parts of the occupied territory of Ukraine since 2014 were not determined.

In the analysis of data it was determined that the highest prevalence of acute rhinosinusitis among the population was registered in Kyiv 1095.7 cases per 100,000 population - on average for 6 years period.

Also, high rates are typical for Kharkiv and Rivne regions during the entire research period. In the Kharkiv region 984.0 cases per 100,000 population were registered in 2012, and this figure increased to 1028.3 cases in 2017. Nevertheless, in the Rivne region we observed a tendency towards a decrease in the prevalence of acute rhinosinusitis during the research period. There were 799.5 cases in 2012, then 614.0 cases per 100,000 population in 2017, but still the indicator was quite high compared to the other regions of Ukraine.

In the Dnipropetrovsk region, we recorded a significant increase in the prevalence of rhinosinusitis from 510.8 cases in 2012 to 754.5 cases per 100,000 population in year 2017.

Thus, analyzing the data obtained, we noted the contradictory nature of acute rhinosinusitis development related to the region (Kharkiv and Dnipropetrovsk oblasts and Kyiv). We note the correlation of the metropolis majority and the number of cases.

However, in such an industrialized region with an increased level of allergenization of the population as Zaporizhzhya region, the level of acute rhinosinusitis disease is reduced.

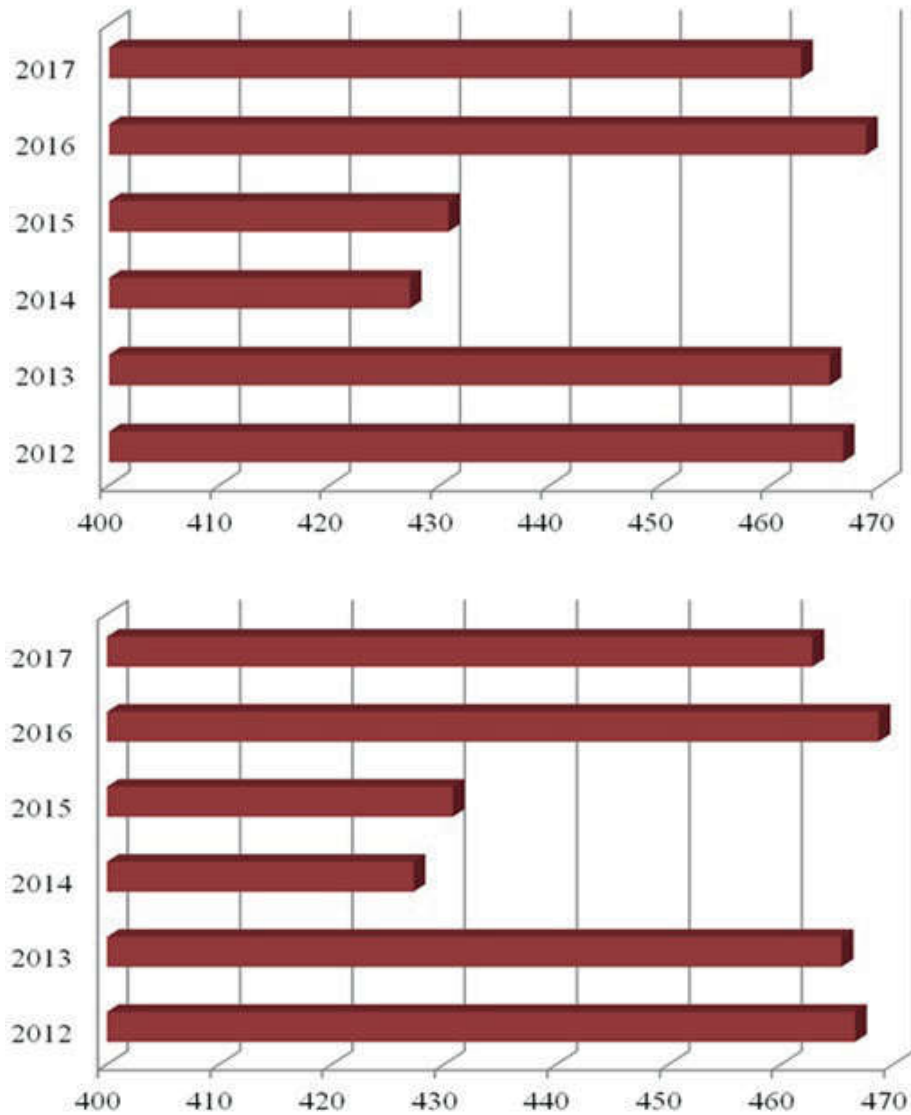


Fig. 1. Indicators of acute rhinosinusitis prevalence in Ukraine from 2012 to 2017.

The lowest level of acute rhinosinusitis is observed in 2012 in Zaporozhye (188.2 cases per 100,000 population) and Kirovograd (268.2) regions. Analysis of data in 5 years, has shown a similar trend of 207.7 and 264.6 cases per 100,000 population, respectively, for these regions.

The parameters of the age and gender clinical picture can be described as follows. So, when analyzing 431 medical cards, it was revealed: 233 middle-aged people 37 ± 5.5 and 198 women 42 ± 2.4 years old. Thus, it may be noted that there is no gender and age difference between patients with acute rhinosinusitis.

It was also observed that in patients with acute rhinosinusitis one of the most frequent complication is a genyantritis observed among men (77 cases) and women (62 cases), which corresponds to 33.0% and 31.3%, respectively, among all patients. The ratio of hemi-sinusitis, frontitis and pansinusitis ranged from 1.5% to 5.8%, without significant difference between men and women.

It is known that there are following types of acute rhinosinusitis in the clinic nowadays: viral, postviral and bactericidal. Thus, the pharmacotherapy of acute rhinosinusitis (ARS) is a comprehensive and directed to the main components of the etiopathogenesis of the disease in accordance with the medical care guidelines (Table 1).

Table 1

**Drugs with the proved effectiveness in treating ARS
(according to the requirements of evidence-based medicine) [9]**

Treatment	Recommendations
Antibiotics	Yes (in acute bacterial rhinosinusitis (ABRS))
Topical corticosteroids	Yes (only in post-viral MS)
Topical corticosteroids in combination with a/b	Yes (only in ABRS)
Systemic corticosteroids in combination with a/b	Yes (only in ABRS)
Irrigation therapy	Yes (as symptomatic therapy in all types of ARS)
Phytotherapy	Yes (at viral and post-viral RS)
Nonsteroidal anti-inflammatory drugs	Yes (at viral and post-viral RS)
Acetaminophen (paracetamol)	Yes (at viral and post-viral RS)

However, modern scholars, family physicians and otorhinolaryngologists continue to seek optimal treatment for acute rhinosinusitis, depending on the etiology and clinical features of the disease, taking into account evidence-based medicine and the emergence of new randomized clinical trials. For example, in Spain, not only the features of acute rhinosinusitis pharmacotherapy were studied, but also the need to determine the impact of the disease upon the quality of patients life. The importance of monitoring of this category of patients for further clinical maintenance and differential diagnosis of complications, including neoplasms is also discussed [10].

Researchers from the People's Republic of China found that comparison of ARS treatment with ceftriaxone and amoxiclav (825 mg / 125 mg) in 120 patients, registered a significant pharmacotherapeutic advantage of ceftriaxone (1000 mg) by 3-4 day of the disease [11].

In Germany, researchers analyzed the use of local corticosteroids in patients with acute rhinosinusitis and polyps in the nasal cavity. The study involved 26,768 patients

with acute rhinosinusitis and 516 patients had nasal polyps. The use of corticosteroids in patients with acute rhinosinusitis has been found to be ineffective, however, in the complex pharmacotherapy of nasal polyps with rhinosinusitis, they are first-line agents with high efficacy [12].

In a study of macrolides use in patients with acute rhinosinusitis by Chinese scientists, it was shown that in the presence of macrolides antibacterial activity, a low proportion of efficacy was observed [13].

In Iran, a systematic review on the evaluation of the herbal medicines efficacy and safety for the treatment of patients with acute rhinosinusitis was conducted and published. The result of this study has shown that some medicinal plants can be sufficiently effective in the complex treatment of acute rhinosinusitis [14].

Conclusions. Thus, it was determined that acute rhinosinusitis is a sufficiently widespread disease in otorhinolaryngology of Ukraine, especially in Kyiv, Kharkiv and Rivne regions, and with the lowest prevalence in the Zaporizhzhya and Kirovograd regions for the research period of 2012-2017. It has also been found that acute rhinosinusitis affects both men and women with an average age of 37.0 ± 5.5 and 42.0 ± 24 respectively. Modern approaches to the pharmacotherapy of acute rhinosinusitis are carried out in accordance with the medical care guidelines and it is a complex treatment directed to the main chains of etiopathogenesis of the disease. However it is necessary to update the approaches to acute rhinosinusitis treatment constantly, taking into account the latest researches on pharmacotherapeutic support of patients.

Prospects for further research. The next stage of our research is the study of clinical and economic rationale for the acute rhinosinusitis treatment at the level of inpatient and outpatient care.

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